

**Remarks**

Applicants resubmit the response to the Non-Final Office Action mailed April 1, 2009 with corrections to Claims 1 and 11. In particular Applicants have amended Claims 1 and 11 so to define "a is any integer between 2 and 7," as opposed to "1 and 7" as in the previous response submitted July 20, 2009. No other changes have been made to this previous response.

Currently pending in the application are Claims 1-18, wherein Claims 1, 3, 11 and 14 are currently amended. Claims 19 and 20 are canceled. In view of the following remarks, Applicants respectfully request reconsideration by the Examiner, and advancement of the application to allowance.

**1. Rejections Under 35 U.S.C. § 112, first paragraph**

Claim 3 is rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Claim 3 has been amended to remove the "substantial" language to overcome this rejection. Applicant respectfully request that the rejections under 35 U.S.C. § 112, first paragraph be withdrawn for Claim 3.

**2. Rejections Under 35 U.S.C. § 112, second paragraph**

Claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Regarding the first rejection under 35 U.S.C. § 112, second paragraph, Applicants have amended Claims 1 and 11 to overcome the rejection under 35 U.S.C. § 112, second paragraph.

Claims 1 and 11 have been amended to overcome the second rejection under 35 U.S.C. § 112, second paragraph. The term "a" has been moved to clarify that it is operative for all embodiments.

Claim 1 has been amended to overcome the third rejection under 35 U.S.C. § 112, second paragraph.

Claims 1 and 11 have been amended to overcome the fourth rejection under 35 U.S.C. § 112, second paragraph.

Claims 1 and 11 have been amended to overcome the fifth rejection under 35 U.S.C. § 112, second paragraph.

Claim 3 has been amended to overcome the sixth rejection under 35 U.S.C. § 112, second paragraph.

Claim 14 has been amended to overcome the seventh rejection under 35 U.S.C. § 112, second paragraph.

Claims 19 and 20 have been canceled to overcome the last rejection under 35 U.S.C. § 112, second paragraph.

Applicants respectfully request that the rejections under 35 U.S.C. § 112, second paragraph be withdrawn for Claims 1-18.

**3. Nonstatutory Double Patenting**

4. Examiner rejects Claims 1 and 4-18 on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 7,078,475. The Applicants note that upon receipt of an indication of allowance, a terminal disclaimer may be filed to overcome any sustainable double-patenting rejection.

5. Examiner has provisionally rejected Claims 1 and 4-18 on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-18 of copending Application No. 11/375,924. Applicants note that upon receipt of an indication of allowance, a terminal disclaimer may be filed to overcome any sustainable double-patenting rejection.

6. Examiner has provisionally rejected Claims 1 and 4-18 on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-20 of copending Application No. 11/365,726. Applicants note that upon receipt of an indication of allowance, a terminal disclaimer may be filed to overcome any sustainable double-patenting rejection.

7. Applicants assert that the current application and commonly assigned application 11/375,924, were commonly owned or subject to an obligation of assignment to the same entity (Huntsman Petrochemical Corporation) at the time of that the current application was made. Support for this assertion can be found on the USPTO Patent Assignment database under Reel/Frame 007989/0225 for Application No. 11/375,924 and Reel/Frame 017452/0964 for Application No. 10/563,699.

8. Applicants note that they may rely on the filing date of the provisional application for data disclosed therein.

9. **Rejections Under 35 U.S.C. § 102 (b) and (e)**

10. Applicants argue that given the current amendments to the claims, the provisional rejection under 102(e) by 11/375,924 is not applicable because all elements of amended Claims 1 and 11 are not disclosed. In particular, 11/375,924 do not disclose a "polyurea polymer [that] has a tear strength of at least 550 pli as measured using ASTM test method D-624" as disclosed in amended Claims 1 and 11.

11. Examiner rejects Claims 1 and 4-18 under 35 U.S.C. § 102(b) as being anticipated by Primeaux, II et al. ('677 or '736 or '755 or '684) (hereinafter "Primeaux").

Primeaux teaches in situ production of aspartic esters and blending such aspartic esters with one or more polyoxyalkyleneamines to prepare a resin blend (Primeaux: Col. 1, Lines 42-49 of the '755 or Col. 1, Lines 47-55 of the '736 or Col. 1, Lines 50-57 of the '684). Primeaux's polyurea elastomers have tear strengths of 180-295 pli ('677: Tables I-VII) and 205-385 pli ('736: Tables 1-9, '755: Tables 1-9, and '684: Tables 1-9). Furthermore, Primeaux teaches, "[e]specially preferred are amine terminated polyethers, including primary and secondary amine terminated polyethers of greater than 1,500 average molecular weight" ('677: Col. 4, Lines 53-56; '736: Col. 7, Lines 32-34; '755, Col. 3, Lines 41-43; '684: Col. 7, Lines 44-46). Applicants' Claim 1, as amended, and Claim 11 include polyurea polymers with tear strengths of at least 550 pli as measured using ASTM test method D-624. Applicants have further amended Claims 1 and 11 to include secondary polyetheramines with molecular weights below 1000. Primeaux fails to disclose these recited limitations and therefore cannot anticipate Claims 1 and 11.

Applicants assert that support for these amendments are found in the Examples section that discloses the use of isopropyl substitutes of JEFFAMINE® D-230, D-400, and T-403 amines (See Page 14, Lines 14-18; Page 16, Sample 2, Table I / Page 17, Sample 4, Table II / Page 18, Sample 6, Table III / Page 19, Sample 8, Table IV). Applicants further argue that "[t]he function of the description requirement is to ensure that the inventor had possession, as of the filing date of the application relied on, of the specific subject matter later claimed by him; how the specification accomplishes this is not material. *In re Smith*, 481 F. 2d 910, 178 USPQ 620 (CCPA 1973), and cases cited therein. It is not necessary that the application describe the claim limitations exactly, *In re Lukach*, *supra* [58 CCPA 1233, 442 F.2d 967, 169 USPQ 795 (1971)],

but only so clearly that persons skilled in the art will recognize from the disclosure that appellants invented processes including those limitations. *In re Smythe*, 480 F.2d 1376, 1382, 178 USPQ 279, 284(CCPA 1973)." (*In re Wertheim*, 541 F.2d 257; 191 USPQ 90 (1976)) (underlining added for emphasis). Applicants argue that one skilled in the art would recognize from the disclosure that applicants had possession of the invention as now described with the current amendments. Applicants further argue that one skilled in the art would be aware of the structures and molecular weights of JEFFAMINE® D-230, D-400 and T-403 through technical bulletins such as the one attached as Appendix I.

Given that Claims 4-10 depend from Claim 1 and Claims 12-18 depend from Claim 11, Applicants respectfully submit that Claims 4-10 and 12-18 are allowable. Accordingly, applicants respectfully request that the Examiner reconsider, withdraw the rejection and allow Claims 1 and 4-18.

12. Examiner rejects Claims 1, 2 and 4-18 under 35 U.S.C. § 102(b) as being anticipated by Hinz et al. ('852) or Becker et al. ('487) or WO 02/102869 A1.

Hinz teaches the use of a secondary polyoxyalkylene-polyamines that have "molecular weights of from 1000 to 8000, preferably from 1000 to 4000. (Col. 6, Lines 50-60).

Becker teaches the use of a secondary polyoxyalkylene-polyamines that have a "molecular weight of from 1100 to 8000, preferably of from 1600 to 4500. (Col. 9, Lines 58-61).

WO 02/102869 A1 teaches that the extensions of gel and tack-free times are afforded by the inclusion of a derivative of isophorone diamine (Huntsman's XTA-754) in aromatic polyurea spray formulations. (Page 10, Lines 16-18).

Applicants' Claim 1, as amended, and Claim 11 include polyurea polymers with tear strengths of at least 550 pli as measured using ASTM test method D-624. Further, Applicants have amended Claims 1 and 11 to include secondary polyetheramines with molecular weights below 1000. The molecular weights of XTJ-584, XTJ-585 and XTJ-586 are isopropyl substitutes of JEFFAMINE® D-230, D-400 and T-403 that have molecular weights of roughly 230, 400, and 440 respectively (See Appendix I). Hinz, Becker and WO 02/102869 A1 fail to recite a polyurea polymer with tear strengths of at least 550 pli that have molecular weight below 1000. Therefore, Hinz, Becker and WO 02/102869 A1 fail to anticipate Applicants' invention.

Given that Claims 2 and 4-10 depend from Claim 1 and Claims 12-18 depend from Claim 11, Applicants respectfully submit that Claims 2, 4-10 and 12-18 are allowable. Accordingly, applicants respectfully request that the Examiner reconsider, withdraw the rejection and allow Claims 1, 2 and 4-18.

13. Examiner rejects Claims 1 and 3-20 under 35 U.S.C. § 102(b) as being anticipated by Grigsby, Jr. et al. ('814).

Grigsby discloses a method for making reaction products of aliphatic isocyanates and polyoxyalklene polyamines which may be made rapidly without the use of a catalyst. (Col. 3, Lines 26-29). Grigsby discloses elastomers with tear strengths of 223-430 pli (Col.10, Table 1).

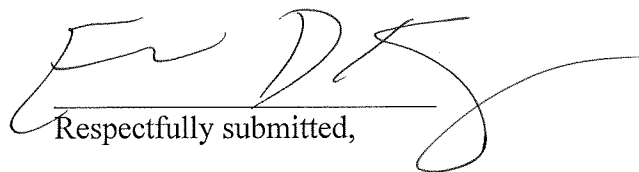
Claim 1, as amended, and Claim 11 disclose polyurea polymers with tear strengths of at least 550 pli as measured using ASTM test method D-624. Grigsby fails to recite a polyurea polymer with a tear strength of at least 550 pli. Therefore, Grigsby fails to anticipate Applicants' invention.

Given that Claims 3-10 depend from Claim 1 and Claims 12-18 depend from Claim 11, Applicants respectfully submit that Claims 3-10 and 12-18 are allowable. Accordingly, applicants respectfully request that the Examiner reconsider, withdraw the rejection and allow Claims 1 and 3-18.

### **Conclusion**

In view of the foregoing remarks, Applicant respectfully submits that the application is now in condition for allowance, and respectfully requests issuance of a Notice of Allowance directed towards the pending claims.

Should any fees be due in connection with the filing of this document, the Commissioner for Patents is hereby authorized to deduct said fees from Huntsman Corporation Deposit Account No. 08-3442.



Respectfully submitted,

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Date:

12-3-09

APPENDIX I - HUNTSMAN TECHNICAL BULLETIN



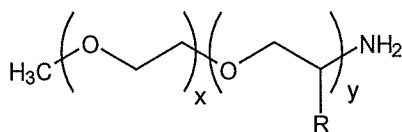
## The JEFFAMINE® Polyetheramines

JEFFAMINE polytheramines are a part of an expanding family of Huntsman products. They contain primary amino groups attached to the end of a polyether backbone. The polyether backbone is normally based on either propylene oxide (PO), ethylene oxide (EO), or mixed PO/EO. Thus they are called "polyetheramines." Historically, the JEFFAMINE polyetheramine family consisted of monoamines, diamines, and triamines based on this core structure. Recently, the addition of secondary, hindered, high-conversion, and polytetramethylene glycol (PTMEG) based polyetheramines has increased the utility of this unique product range. The JEFFAMINE polyetheramines undergo typical amine reactions, often imparting increased flexibility, toughness, low viscosity, and low color. The wide range of molecular weight, amine functionality, repeating unit type, and distribution can provide flexibility in the design of new compounds or mixtures.

### JEFFAMINE® MONOAMINES (M series)

JEFFAMINE monoamines are designated as the JEFFAMINE M series. The letter M signifies a monoamine and the number represents the approximate molecular weight.

JEFFAMINE M series products are prepared by reaction of a mono-alcohol initiator with EO and/or PO, followed by conversion of the resulting terminal hydroxyl groups to amines. M series products have the following representative structure:



R = H for (EO), or CH<sub>3</sub> for (PO)

JEFFAMINE®	PO/EO mol ratio	MW*
M-600 (XTJ-505)	9/1	600
M-1000 (XTJ-506)	3/19	1,000
M-2005	29/6	2,000
M-2070	10/31	2,000

\* MW = approximate molecular weight

JEFFAMINE M-600 and JEFFAMINE M-2005 polyetheramines are predominately polypropylene glycol (PPG) based, whereas JEFFAMINE M-1000 and JEFFAMINE M-2070 polyetheramines are predominately polyethylene glycol (PEG) based and are therefore more hydrophilic.

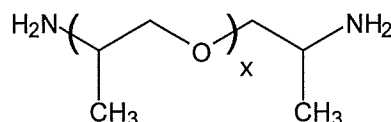
### JEFFAMINE® DIAMINES

(D, ED, and EDR series)

JEFFAMINE diamines include the D, ED, and EDR series products. The D signifies a diamine, ED signifies a diamine with a predominately PEG backbone, and EDR designates a highly reactive, PEG based diamine. As with the M series, the number represents the approximate molecular weight.

#### JEFFAMINE® D Series

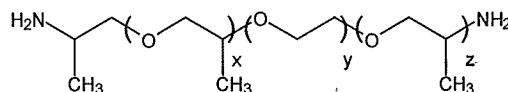
JEFFAMINE D series products are amine terminated PPGs with the following representative structure:



JEFFAMINE®	x ≈ a	MW*
D-230	~2.5	230
D-400	~6.1	430
D-2000	~33	2,000
D-4000 (XTJ-510)	~68	4,000

#### JEFFAMINE® ED Series

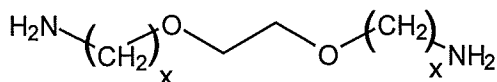
JEFFAMINE ED series products are polyether diamines based on a predominately PEG backbone. PEG imparts complete water solubility to each of the products in this series. The JEFFAMINE ED products have the following representative structure:



JEFFAMINE®	y	x + z	MW*
HK-511	2.0	~1.2	220
ED-600 (XTJ-500)	~9.0	~3.6	600
ED-900 (XTJ-501)	~12.5	~6.0	900
ED-2003 (XTJ-502)	~39	~6.0	2,000

#### JEFFAMINE® EDR Series

JEFFAMINE EDR-148 (XTJ-504) and JEFFAMINE EDR-176 (XTJ-590) amines are much more reactive than the other JEFFAMINE diamines and triamines. They are represented by the following structure:

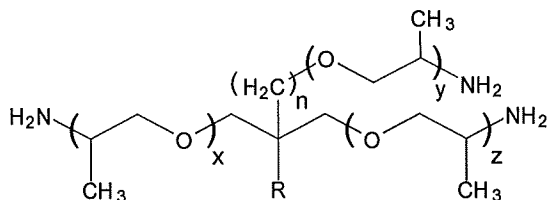


JEFFAMINE®	x	MW
EDR-148 (XTJ-504)	2.0	148
EDR-176 (XTJ-590)	3.0	176

These products can be used in a number of applications since they are unhindered diamines miscible in a wide variety of solvents. Reactions typical of aliphatic diamines (polyamide formation through reaction with dibasic acids, epoxy resin curing, polyurea formation through reaction with isocyanates) may be expected with these products.

#### JEFFAMINE® TRIAMINES (T series)

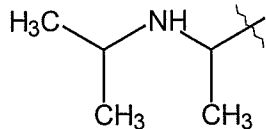
JEFFAMINE T series products are triamines prepared by reaction of PO with a triol initiator, followed by amination of the terminal hydroxyl groups. They are exemplified by the following structure:



JEFFAMINE®	R	n	Moles PO (x+y+z)	MW*
T-403	C <sub>2</sub> H <sub>5</sub>	1	5-6	440
T-3000 (XTJ-509)	H	0	50	3000
T-5000	H	0	85	5000

#### JEFFAMINE® Secondary Amines (SD Series, ST Series)

The SD Series and ST Series products consist of secondary amine versions of the JEFFAMINE core products. The SD signifies a secondary diamine and ST signifies a secondary triamine. The amine end-groups are reacted with a ketone (e.g. acetone) and reduced to create hindered secondary amine end groups represented by the following terminal structure:



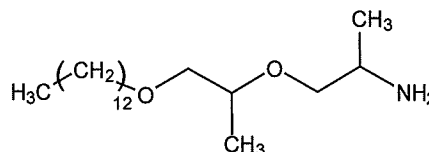
One reactive hydrogen on each end group provides for more selective reactivity and makes these secondary di- and triamines useful for intermediate synthesis and intrinsically slower reactivity compared with the primary JEFFAMINE amines.

JEFFAMINE®	Base Product	MW*
SD-231 (XTJ-584)	D-230	315
SD-401 (XTJ-585)	D-400	515
SD-2001 (XTJ-576)	D-2000	2050
ST-404 (XTJ-586)	T-403	565

#### EXPERIMENTAL AMINES

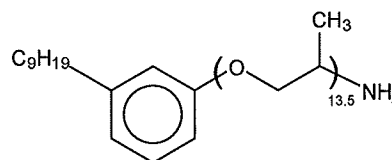
This next series of amines includes monofunctional amines similar to the M series. They are oleophilic and not water soluble.

#### XTJ-435 Chemical Intermediate



XTJ-435 is a monoamine derived from a PO adduct of a C<sub>12-14</sub> alcohol. This product is "restricted" and may only be used as a chemical intermediate.

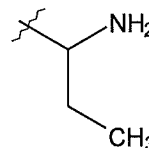
#### XTJ-436



XTJ-436 is a 1000 molecular weight, nonylphenol initiated, polypropylene glycol derived monoamine.

#### Slower Amines

Slower amines analogous to JEFFAMINE D-230 and JEFFAMINE T-403 polyetheramines are now available under the names XTJ-568 and XTJ-566, respectively. These unique materials are primary amines created by amination of butylene oxide (BO) capped alcohols. This method results in primary amines with the terminal end group structure represented below:



#### Higher Conversion Amines

Methods have been developed to increase functionality and conversion to primary amines for several of the core JEFFAMINE polyetheramines. Two such products are currently available: a high conversion 440 molecular weight diamine (XTJ-582), and a high conversion 2000 molecular weight diamine (XTJ-578). The higher functionality and conversion are beneficial in polymerizations such as polyamide formation.